

# PATENT SPECIFICATION

(11) 1297 827

1297 827

## DRAWINGS ATTACHED

- (21) Application No. 40731/70 (22) Filed 25 Aug. 1970
- (23) Complete Specification filed 20 Aug. 1971
- (45) Complete Specification published 29 Nov. 1972
- (51) International Classification E02D 17/14
- (52) Index at acceptance  
E1F 33
- (72) Inventor JAMES NEILSON McCART



## (54) EARTH DRILLING AUGER BLADE HOLDER

(71) We, REDHURST ENGINEERING COMPANY, a Partnership organised and existing under Scots Law, of Burfield Road, Thornliebank, Glasgow, Scotland, Great Britain, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a cutting blade holder for an earth drilling auger.

An auger for drilling vertical and inclined holes in earth for the reception of piles includes a central shaft or mandril. A number of steel plates are welded to each other and to the mandril to form a helix generated about the mandril. It is necessary to provide a high quality steel cutting blade at the lower leading edge of the helix. The cutting blade is mounted in a holder.

It is an object of the present invention to provide an improved blade holder for mounting a cutting blade.

According to the present invention there is provided a cutting blade holder for an earth drilling auger comprising a mandril carrying a helical blade, the holder including a bar portion cast integral with a boss portion, the bar portion forming part of a helix about the boss portion, one edge of the bar portion extending laterally with respect to the boss axis and intended to be welded to the leading edge of the auger blade, and a second edge of the bar portion extending laterally with respect to the boss axis and having a slot along its length adapted to receive a blade.

Preferably one end face of the boss portion is bevelled for welding the end face to the mandril of the auger.

The other end face may have a rectangular recess for receiving a guiding point for the auger.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings, in which:—

Fig. 1 is a perspective view from above  
[Price 25p]

and to one side of the blade holder according to the present invention; 50

Fig. 2 is a perspective view from above and to the other side of the blade holder; and

Fig. 3 is a perspective view from below and to the side shown in Fig. 2; and including a guide member. 55

Referring to the drawings, a blade holder includes a bar portion 10 cast integral with a boss portion 11 in a 3% carbon steel. The bar portion is disposed relative to the boss portion such that the bar portion generally forms part of a right hand helix about the boss portion. 60

The lower leading edge of the bar portion has a slot 12 extending along its length. The upper trailing edge 13 is flat and disposed generally perpendicular to the plane of the helix. The upper and lower surfaces 14, 15 of the bar portion are convex. A hole 16 located intermediate the length of the bar portion communicates with both convex surfaces and the slot. The hole is countersunk on both convex surfaces. 65

A cutting blade (not shown) fits into the slot 12 such that a cutting edge portion of the blade projects from the holder at a predetermined angle, and a hole through the blade aligns with the hole 16 in the holder. A bolt (not shown) registers with the aligned holes to fix the blade in the holder. 70

The upper end face 20 of the boss portion is bevelled and the lower end face 21 has a rectangular recess 22. A rectangular guide member 23 having a pointed portion for guiding the auger (not shown) mates with the recess. A pin registers with a hole 24 extending from the outside of the boss portion 11 to the recess and an aligned hole 25 in the guide member 23 to fix the guide member to the holder. 75

The blade holder is mounted to the auger by welding the trailing edge 13 of the holder to the leading edge of the helical blade of the auger and by welding the upper bevelled end face 20 of the boss portion 11 to the lower end face of the auger mandril which carries the helical blade. 80

95

As there is no weld at the junction of the bar portion and the boss portion the holder is stronger than conventional holders.

The holder is simpler and quicker than conventional holders to fit to the auger especially during replacement in situ.

The simplicity in mounting the holder to the auger allows the correct angle of incidence of the blade holder and blade to be easily obtained.

The total cost of an auger fitted with the blade holder of the present invention is considerably less than that of an auger having a conventional blade holder.

15 WHAT WE CLAIM IS:—

1. A cutting blade holder for an earth drilling auger comprising a mandril carrying a helical blade, the holder including a bar portion cast integral with a boss portion, the bar portion forming part of a helix about the boss portion, one edge of the bar portion extending laterally with respect to the boss axis and intended to be welded to the leading edge of the auger

blade, and a second edge of the bar portion extending laterally with respect to the boss axis and having a slot along its length adapted to receive a blade.

2. A blade holder as claimed in Claim 1, in which one end face of the boss portion is bevelled for welding the end face to the mandril of the auger.

3. A blade holder as claimed in Claim 2, in which the other face has a rectangular recess for receiving a guiding point for the auger.

4. A cutting blade holder for an earth drilling auger, substantially as hereinbefore described, with reference to the accompanying drawings.

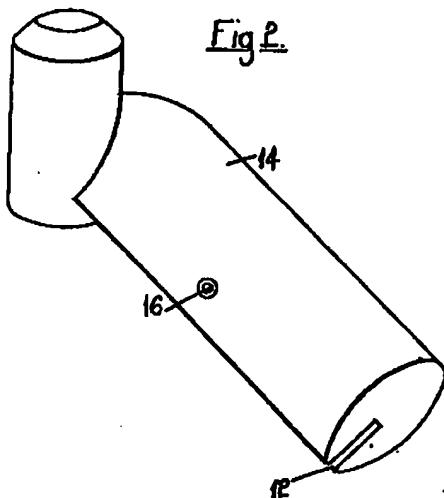
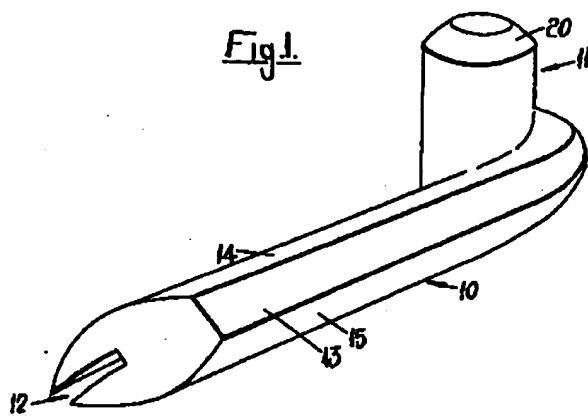
FITZPATRICKS,  
Chartered Patent Agents,  
14/18 Cadogan Street,  
Glasgow G2 6QW,  
and  
Warwick House,  
Warwick Court,  
London, WC1R 5DJ.

Printed for Her Majesty's Stationery Office by Burgess & Son (Abingdon), Ltd.—1972.  
Published at The Patent Office, 25 Southampton Buildings, London, WC1A 1AY  
from which copies may be obtained.

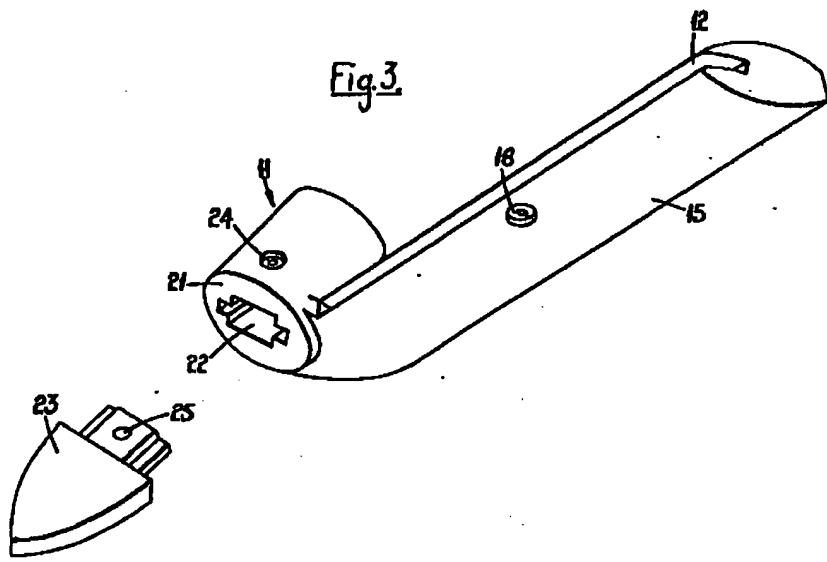
BEST AVAILABLE COPY

1297827 COMPLETE SPECIFICATION

2 SHEETS This drawing is a reproduction of  
the Original on a reduced scale  
Sheet 1



1297827 COMPLETE SPECIFICATION  
2 SHEETS This drawing is a reproduction of  
the Original on a reduced scale  
Sheet 2



BEST AVAILABLE COPY